THE

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Medical Supplement

'चिकित्सितात्पुण्यतमं न किञ्चिदपि शुश्रुमः'। 'बिभेत्यल्पश्रुताद्वेदो मामयं प्रहरिष्यति'

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NOTES AND COMMENTS.

Dr. G. Leven recommends lying face down on the floor as a measure for arresting hiccough. In illustration he cites the case of a patient who had had hiccough for three days and in whom a variety of well-known remedial procedures had failed. A few minutes after he had been told to lie down, face downward, he left the office wholly relieved. Frequently it is advisable also to reduce the irritability of the gastric mucous membrane by prescribing two grams (30 grains) of sodium bromide a day in divided doses after meals, as well as one tablespoonful, five or six times a day, of ten grams bismuth subcarbonate and twenty grams of acacia in 300 c. c. of sterile distilled water.

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The Birth Control Conference's private session at London, was confined to members of the medical faculty and was attended by 154 including fifteen medical officers of health, several being appointed to attend by municipalities. It was resolved, with only three dissentients, that birth control by hygienic contraception devices was absolutely distinct from abortion physiologically, legally, and morally and there was no evidence that such devices were injurious to health or conducive to sterillity. The meeting formed itself into a medical society for the study of birth control.

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That the beautiful, useless butterfly may be the deliverer of mankind from the sources of tuberculosis is the claim of the French bacteriologist. Metalnikow, in a report of his investigations which he has just presented to the Pasteur Institute. His researches have not yet been carried far enough to make any definite conclusion, but he declares that he believes himself to be on the track of a very important discovery and has asked the help of other scientists to study along the lines he has begun. For some time past he has been experimenting on the larvae of butterflies and moths, and he has discovered that they have the power to destory all the most dangerous baccilli. He inoculated them with diphtheria, plague, tetanus and tuberculosis and discovered that however heavy the dose, the bacilli did not live more than a few days in the larvae which seemed to suffer no way in health. The bacillus of Koch, for example, which lives in the body of man for years after it once gets a hold, was annihilated in the body of the larvae in two or three days. In an interview Metalanikow said: "I am convinced that I am on the track of the solution. The grubs eminently possess digestive juices which destroy the parhogenic microbes, and what we have to do next is to isolate these juices." The vitality of the larvae, the scientist declares, is enormous and he has not been able to find any baccilli that can obtain a hold on their bodies. Now he is endeavouring to isolate the serum of butterfly grubs with which he hopes to cure the world of tuberculosis.

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Dr. Landsman refers to the fact that occasionally persons introduce into the rectum objects made of glass, which become broken and present sharp and cutting edges. When they are well beyond the reach of the fingers removal is difficult, not only because of the danger to the soft parts, but because of the inability to maintain a good grip on the smooth surface. To overcome these; the following procedure may be tried. The patient is put in the knee-chest position to secure inflation of the rectum, and a two-bladed speculum is inserted and held in place by an assistant. By means of alligator forceps carry up small squares of adhesive plaster cut to size, which are applied to the sharp edges, and readily moulded over the sides of the glass. The object may then be easily grasped with any long-handled forceps (ordinary placental forceps will do) and delivered without any danger of slipping or wounding the walls of the rectum.

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Some French physiologists believe that the prevalence of the custom of keeping rabbits explains the comparative freedom of Europe from malaria. They say that the Anopheles mosquito, the chief agent in spreading malaria infection, has a special fondness for rabbit flesh, and abandons its human victim in the presence of this delicacy. It is affirmed that in Anopheles infested places near rabbit hutches not only man but domestic farm animals are free from attack.

Fatty Acids in the treatment of Diseases caused by Acid Fast Germs.

By CATAIN P. GANGULI, B. A., D. T. M.

EXPLANATION OF FOCAL AND GENERAL REACTION.

The effect of injection of fatty substances is the production and mobilisation of lypolysin in the tubercular processes, which causes breaking down of the bacilli and formation of emulsion of bacillary albuminoses, which acting as antigen, excites the formation of specific albuminolysins. This albuminolysin or bacteriolysin is responsible for the disintegration of the bacilli and production of a toxic substance.

Again, the antibody and antigen combination, which take place principally in the tubercular and leprotic foci and processes, involves the fixation of complement, which calls for chemotaxic production of more lysins (according to Sthal and Pieffer's law of chemotaxis) with the result that hyperaemic stasis ensues causing diapedisis of white blood cells to the foci, This condition is known as focal reaction, This condition of hyperaemia is the principal cause of healing of disintegrated processes, either by granulation or absorption of inflamatory products and casting of softened and disintegrated portions of leprotic or tubercular processes by a method with which the name of Bier is associated.

ANTITOXINS AND BACTERIOLYSINS.

I want to lay particular stress upon the proper understanding of the difference between antibodies produced by toxins and those produced by fatty acids. The toxins produce disturbances in the thermogenic centre of the cerebrum, either directly or indirectly through anaphylotoxins as suggested by Bandelier and Rœpke. The production of reaction from toxins is either a sign of increased vitality or flourishing of the bacilli in the affected foci from a temporary suspension of restraining influence of bacteriolysis. The toxins excite the formation of antitoxins or anaphylotoxins in the serum of tubercular patients which must be differentiated from lipolysins and bacteriolysins, excited after injection of fatty acids. This explains comparatively milder reactions from fatty acids than these obtained from toxins.

As regards the comparative value of immunity from all these substances, it has been conclusively proved that immunity obtained from injection of bacillary emulsions is also effective against toxins such as Koch's Old Tuberculin, but the converse does not hold good. It is presumed from what has already been said that the immunity obtained from fatty acids will be like that from bacillary emulsions. But as we shall see later on, this immunity is not complete and both old tuberculin and Bacillary Emulsions have still got place in the practical treatment of tuberculosis.

FIBROLYTIC ACTION OF FATTY ACIDS.

Besides the antiseptic and bacteriolytic properties of fatty acids, another remarkable property has been noticed in the fatty acids thereapy. In my previous report, I mentioned the reasons for supposing that fatty acids produce fibrolysis of the affected parts. I cannot say whether this action is direct one or indirect one by induction of increased leucocytosis. We know that cinnamic acid stimulates the increase of leucocytes in the blood. Dr. Muir attributed the remarkable fibrolysis of hypertrophied liver and spleen of Kalazar patients to the action of deucocytes and thus he successfully introduced the famous T. C. C. O. (turpentine, camphor, creasote and olive oil,) for injection by intramuscular method. I cannot say how far this action was due to leucocytosis or to injection of olive oil. Inmy experience, however, leucocytosis is not a constant factor after sodium morrhuate treatment.

Since my previous report, further evidence have been collected to support the fibrolytic action, the most remarkable being the gradual subsidence of fibro-neuroma in two patients.

The fibrolytic action of fatty acids does not interfere with the healing process by the formation of granulation tissues and resulting cicatrices. Its main action is penetration or partial absorption of the fibrous capsules surrounding the tubercular foci specially those which are recently formed by flattening of ephitheloid cells by their proliferation. It has got a slight rather slow action on fully formed organised fibrous tissues. Of course, it has no action on vital fibrous tissues of the body. But this limited action of the fatty acids on the newly formed fibrous tissues exerts a more permanent effect on the cure of the tubercular patients. It has been repeatedly found that cases, in which tubercle bacilli were persistently negative, became bacteriologically positive after exhibition of sodium morrhuate treatment. Although there are many factors which may be responsible for this manifestation, the fibrolytic action cannot be ignored. Many latent foci, harbouring tubercle bacilli, already devitalised by being shut out from nutrition within the foci are readily destroyed by the lysins already existing in their neighbourhood.

Lastly, I should not pass unnoticed one fact in connection with fatty acids. We all know that osmosis depends on the ability of a membrane differenciate by solvent or absorbent action between the substances which seek to pass through it. The lipoid nature of the protoplasmic membrane of the cells of our body is a generally accepted one, although some dyes which are soluble in fact could not penetrate it, perhaps on account of some selective vital action. Any how there is a great future for fatty acids not only to produce a high liposetitre in our serum but also to act as adjuvants to some drugs and antibodies seeking penetration of the cells of our body.

SUMMARY.

The fatty acids act in three ways:—

1. By their antiseptic action the fatty acids restrain thevital action of the acid-fast bacilli and thus inhibit the production of toxins which are responsible for producing general reaction. But it may be noted that this action is very limited.

2. It excites the formation of partial antibodies for fatty and albumin ıs substances of which the acid-fast bacilli are principally composed and also the formation of antitoxins associated with bacillary emulsion. By causing disintegration of

fatty substances of the bacilli, they deprive them of their chief offensive (viz., its parasitic nature) and defensive weapons (viz., the power of resistance to bacteriolysins.)

3. Besides above, there is a third and important fibrolytic action which ensures the permanency of the cure, by eliminating latent tubercular foci from the system.

4. Lastly, there is a great possibility of fatty acids as adjuvants of various drugs of antibodies seeking penetration of cells of animal organisms as protoplasmic membranes of the cells are of lipoid nature and osmosis depends on the ability of the membrane to differentiate by solvent or absorbent action between the substances which seeks to pass through it.

Indian Medical Record.

Brain Surgery.

Its Marvels.

In his recent presidential address to the British Medical Association, Sir William MacEwen told of an operation performed by himself on a man suffering from an abscess on the brain.

The patient collapsed, and artifiicial respiration had to be carried on while the brain was opened and the pus removed. Suddenly the man, who for long minutes had been trembling on the brink of the grave woke up.

"What's all this fuss about ?." he remarked pettishly.

Operations on the brain will make the blind to see, the lame to walk, and will restore other lost faculties.

Time was, and not so long ago, when a bullet in the brain meant certain death. To-day there are scores of men, alive and well who have been shot through the head.

A certain man was suffering from brain disease and X-ray examination showed that a portion of the the brain was actually decayed. The patient was in a state of "coma."

The doctor in charge of the case decided to procure the brain of another patient and transplant a portion of it to replace the diseased portion.

That day a child born in one of the hospital wards died. Its brain was at once removed. The back of the man's skull was then removed, the diseased portion of his brain cut away and replaced by a part of the infant's brain. Then the section of the skull was replaced. A week later the patient was rapidly improving !

Sometimes brain operations result in apparent miracles.

A patient suffering from tumour on the brain was taken into a big hospital. He had been blind for seven years. When the tumour was removed the man quickly recovered not only his health, but also his sight.

More marvellous still, however, operations of this kind sometimes result in making a bad man good!

A man was sentenced to five years' imprisonment after being found guilty of nearly 200 robberies.

He was aged forty-three and had been more or less criminal in his tendencies all his life. The prison doctor, examining him, found a dent in his skull, and learnt that the man had had a bad fall when a boy.

The doctor decided to operate. He did so at once, and found that the bone was pressing on the brain. He raised the bone and cut it away performing the operation known as "trepanning."

The result was extraordinary. All the man's criminal tendencies disappeared; he became quite normal. On application to the Higher Courts he was released, and by latest accounts, was earning an honest livelihood.

Still more remarkable was the case of a savage, forbidding brute, sentenced to imprisonment for life for murder. Even the warders themselves were afraid of him. After being in prison three years a visiting surgeon examined him and found that he had a deep depression at the back of his skull.

The surgeon decided that, in all probability, a splinter of bone had been driven into the brain. He operated, found that his diagnosis was right, and removed the splinter.

The man got well rapidly but the change in his character was far more wonderful than that in this health. His whole face altered. He became bright, kindly, intelligent, and his new disposition was as sweet and kindly as it has previously been fierce and brutal.—'I. D. News.'

The functions of the Omentum.

Although the functions of the omentum have received only cursory attention in medical literature, it plays such a definite part in both normal and pathologic abdominal conditions that it should not be neglected. That fluids are absorbed from the peritoneal cavity was known by Aristotle, although the route of absorption is still in dispute. Moreover, Shipley and Cunningham demonstrated that "true and pseudo solutions and granules of particulate bodies" are absorbed by the omental vessels, and others have shown that the lymphatic plexuses under the diaphragm absorb considerable fluid soluble elements. Undoubtedly the relative osmotic pressures influence the rate and extent of absorption, and posture also plays a part, as indicated by the favourable effects of Fowler's position in general peritoneal infections.

When foreign bodies are introduced into the peritoneal, cavity, they soon become encapsulated by the omentum and, if they are of organic nature, they are removed by absorption. LePlay found that even the

resected omentum when left in the abodomen retains the power of reaction to foreign bodies. It has long been known that the omentum, in many cases, seems to move to the site of acute peritoneal infection, this tendency being so characteristic that the omentum has been called "abdominal policeman," "friend in need" and "the great leukocyte." Norris showed that the omentum is entirely devoid of muscle, so that it seems logical to accept the view of Rubin and others that it does not possess the power of independent movement, but that the active peristalsis of the intestine, assisted by diaphragmatic movements and the adhesive property of the inflamed serious coverings, pushes the omentum over an inflamed area.

Another function ascribed to this unusual tissue is the sealing of perforation of hollow viscera, and surgeons generally make use of this property not only to strengthen lines of intestinal anastomosis but also for support of the walls of various organs.

The omentum contains many phagocytic cells (Metchnikof), singly and in islands along blood vessels; Morris showed that it picks up bacteria, and Buchtel found that animals deprived of the omentum were less resistant than normal animals to induced peritoneal infection. Then, Cunningham demonstrated recently that animals deprived of the omentum produced fewer cells of the plasmatocyte type than normal animals, in the exudate formed in response to peritoneal irritation. It remains now to determine whether phagocytic action is the only anti-infectious property of the omentum, or whether it also takes part with the spleen, marrow and other organs in the development of antibodies.

DeRenzi and Boeri believe, on the basis of experiments in animals in which vascular supply to the spleen was cut off, that life depends solely on the presence of an intact omentum under such circumstances. In the animals surviving, the spleen became converted into a fibrotic mass completely encapsulated by the omentum. This function has been further studied in experimental strangulation of large segments of the gastro-intestial tract, and when the viability of strangulated intestines seems questionable or the patient is in a too precarious condition for extensive resectian, the omentum may prove an invaluable agent of vascularization.

To summarize the omentum is an important factor in absorption; it is capable of walling of localised peritoneal infactions and of encapsulating foreign bodies; it has considerable anti-infactious power, and it may be used to furnish a new vascular supply to strangulated organs. Whether the omentum has still other functions remains for future investigation to determine. Clearly, the surgeon at sll times should do his best to preserve this remarkable structure because of the wide range of its protective functious—*The Journal of the American Medical Association.*

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